

Applicants: Dev et al.  
Continuation Application No.: Unassigned  
Continuation Application Filed: December 14, 2001  
Parent Application No.: 09/329,098  
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1. (Amended) An apparatus for introducing a composition into at least one cell in a vessel in a subject comprising:
- a catheter having at least one inflatable balloon portion, wherein upon inflation, the balloon occludes the vessel;
  - at least one infusion [passage] opening for introducing the composition into the subject proximal to the at least one inflatable balloon portion;
  - a first electrode positioned adjacent to at least one infusion opening; and
  - a second electrode positioned with respect to the first electrode and the subject such that an electric field sufficient to cause electroporation of at least one cell [in the vessel is generated, thereby allowing the composition to enter at least one cell] after introduction of the composition through at least one infusion [passage] opening.

The following new claims 7-22 have been added:

7. (New) The apparatus of claim 1, wherein the catheter has two inflatable balloon portions.
8. (New) The apparatus of claim 7, wherein the at least one infusion opening is between the two inflatable balloon portions.
9. (New) The apparatus of claim 1 or 8, wherein the first electrode is coincident with the at least one infusion opening.

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- Sub 10. 10. (New) A catheter comprising:  
a first inflatable balloon portion near the distal end of the catheter;  
a second inflatable balloon portion proximal the first inflatable balloon, wherein inflation of the first and second balloon occludes a vessel between the first and second balloon;  
at least one infusion opening for introducing a composition into a subject located between the first and second balloon portions;  
a first electrode positioned adjacent to or integral with at least one infusion opening; and  
a second electrode positioned with respect to the first electrode and the subject such that an electric field sufficient to cause electroporation of at least one cell before, during or after introduction of the composition through the at least one infusion opening.
11. (New) The catheter of claim 10, further comprising an electrical source connected to the first and second electrodes for applying a voltage between the electrodes in an amount sufficient to cause electroporation of at least one cell.
12. (New) The catheter of claim 10, wherein the vessel is a blood vessel.
13. (New) The catheter of claim 10, wherein the first electrode is formed at least in part by a biologically inert material.
14. (New) The catheter of claim 10, wherein the second electrode is a guidewire in the catheter.
15. (New) The catheter of claim 10, wherein the second electrode is a silver plate configured to be placed in contact with the subject.

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Sub D1  
16. (New) The apparatus of claim 1, wherein the at least one inflatable balloon is near the distal end of the catheter.

Sub B1  
17. (New) An apparatus for introducing a composition into at least one cell in a vessel in a subject comprising:

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a catheter having at least one inflatable balloon portion at a position other than the distal end of the catheter;

at least one infusion opening for introducing the composition into the subject;

a first electrode positioned adjacent to at least one infusion opening; and

a second electrode positioned with respect to the first electrode and the subject such that an electric field sufficient to cause electroporation of at least one cell after introduction of the composition through at least one infusion passage can be administered.

18. (New) The catheter of claim 17, further comprising an electrical source connected to the first and second electrodes for applying a voltage between the electrodes in an amount sufficient to cause electroporation of at least one cell.

19. (New) The catheter of claim 17, wherein the vessel is a blood vessel.

20. (New) The catheter of claim 17, wherein the first electrode is formed at least in part by a biologically inert material.

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21. (New) The catheter of claim 17, wherein the second electrode is a guidewire in the catheter.

22. (New) The catheter of claim 17, wherein the second electrode is a silver plate configured to be placed in contact with the subject.

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